

# WATER QUALITY MEMORANDUM

## Utah Coal Regulatory Program

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October 27, 2009

TO: Internal File

FROM: April A. Abate, Environmental Scientist II *AA* 10-27-2009

THRU: James D. Smith, Permit Supervisor *JS* 10/29/09

SUBJECT: 2009 Second Quarter Water Monitoring, CW Mining Company, Bear Canyon Mine, C/015/0025, Task ID # 3334

The monitoring plan is described on pages 7-48 through 7-60A of the MRP. It includes Tables 7-12 through 7-17.

**1. Were data submitted for all of the MRP required sites?**

**In-mine**

YES ☒ NO ☐

A total of four in-mine samples are listed in the Bear Canyon water monitoring plan. Samples SBC-9A, Mohrland Portal 16-8-8-10 and UG-1 were sampled in May 2009. Sample UG-1 and SBC-9A were sampled for operational parameters during the second quarter. Sample 16-8-8-10 was sampled for field parameters only. No information regarding samples UG-1 and UG-2 was listed on the water monitoring table in the MRP indicating what parameters these locations are sampled for.

**Springs**

YES ☒ NO ☐

Most of the spring samples in and around the Bear Canyon mine are sampled for field or baseline parameters. Some of the springs are monitored for operational parameters on a quarterly basis including: SBC-3 through SBC-5, SBC-14, and SBC-17.

**Streams**

YES ☒ NO ☐

Stream samples BC-1 through BC-4 and CK-1 and CK-2 are monitored for operational parameters in February, May, August, and October and field parameters in June, July and September. Stream samples FC-1 and FC-2 are monitored monthly for field parameters in May/June through August and again in October. FC-3 through FC-8 are monitored for baseline parameters in those same months.

**UPDES**

YES ☒ NO ☐

Five stations are monitored for the Bear Canyon UPDES permit on a monthly basis. All five stations were monitored during the second quarter of 2009.

**Wells**

YES ☒ NO ☐

Four wells are monitored for depth to water measurements only from May through October. All four wells were monitored during the second quarter of 2009.

**2. Were all required parameters reported for each site?**

**In-mine**

YES ☒ NO ☐

**Springs**

YES ☒ NO ☐

**Streams**

YES ☒ NO ☐

Stream samples FC-1, FC-2 were sampled for operational parameters during the second quarter. According to the schedule, only field parameters are required for these locations. Additionally, operational parameters were sampled in May and June for stream sample CK-2 when field parameters are only required in May.

**UPDES**

YES ☒ NO ☐

Only one location, UPDES sample #004 yielded any flow during the 2nd Quarter 2009. This location was monitored semi-monthly.

**3. Were any irregularities found in the data?**

**In-mine**

YES ☐ NO ☒

**Springs**

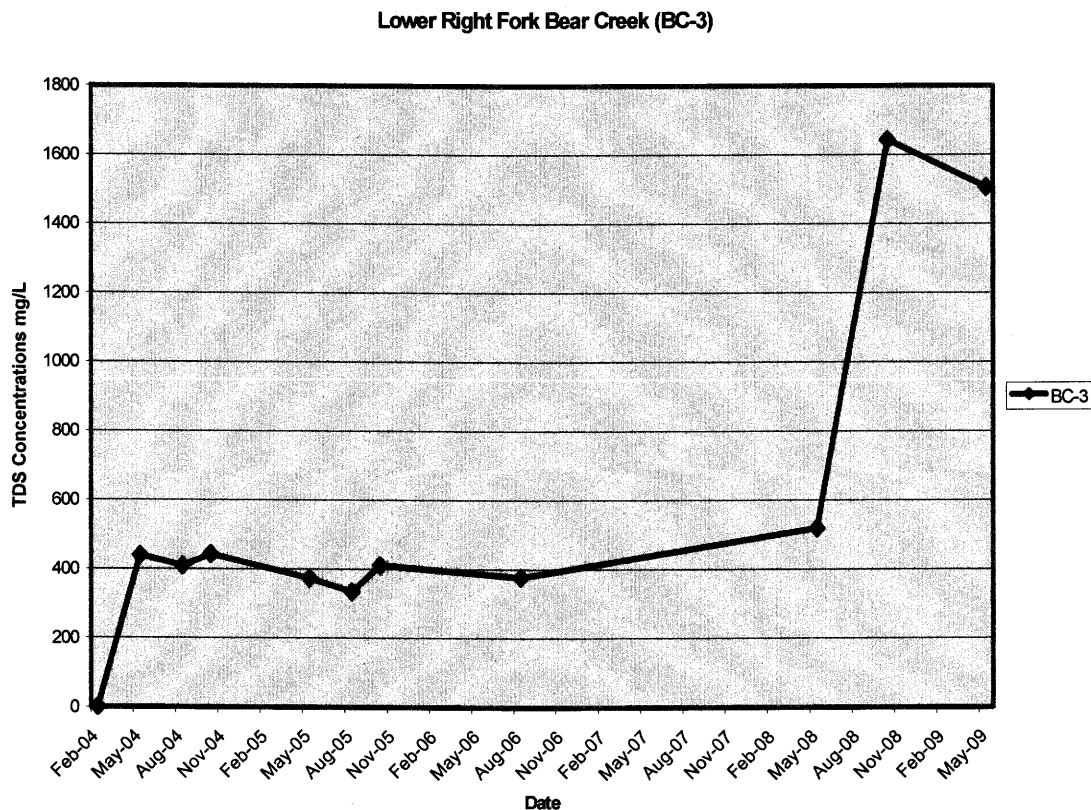
YES ☒ NO ☐

Spring sample SBC-16B is sampled for baseline parameters. Conductivity, hardness, calcium and sodium were outside two standard deviations from normal levels during the latest round of sampled that occurred on May 27, 2009. Spring SCC-5 on Gentry Mountain reported a higher than average flow rate of 10 gpm during the May 2009 sampling event.

### Streams

YES ☒ NO ☐

Sample BC-3 at the Lower Right Fork of Bear Creek has shown a recent increase in the levels of Total Dissolved Solids (TDS) since Fall 2008. Prior to this increase, TDS levels have averaged around 400 mg/L since 2004 (see chart below). Other water quality parameters such as dissolved calcium, dissolved potassium, hardness, sulfate and others were also outside of two



standard deviations during the October 2008 and May 2009 sampling.

### UPDES

YES ☐ NO ☐

UPDES sample UTG040006-004 (004) exceeded the 30-day average discharge limitation of 500 mg/L for TDS based on the two rounds of data collected on May 27 and June 3, 2009. All other parameters were compliant with effluent limitations in the Bear Canyon UPDES permit.

### Wells

YES ☒ NO ☐

Wells SDH-2 and SDH-3 reported depth to water measurements of 75 and 78 feet, respectively. These data appear do not correlate with the previous depth to water measurements

from these wells, which average approximately 1,500 feet below casing. Anomalous data with similar depth to water measurements from both of these wells was also reported in July 2008.

SITE	SITE	SITE		Water Level	Top of	Potentiometric
TYPE	NAME	DESCRIPTION	DATE	Depth	Casing	Water Surface
				feet	Elevation	Elevation
Well	SDH-2	McCadden Ridge Well	5/27/2009	75	9486	9411
Well	SDH-2	McCadden Ridge Well	10/23/2008	1526.75	9486	7959.25
Well	SDH-2	McCadden Ridge Well	9/19/2008	1561.4	9486	7924.6
Well	SDH-2	McCadden Ridge Well	8/27/2008	1542.92	9486	7943.08
Well	SDH-2	McCadden Ridge Well	7/8/2008	68	9486	9418
Well	SDH-2	McCadden Ridge Well	6/30/2008	1538.3	9486	7947.7
Well	SDH-3	Trail Ridge Well	5/27/2009	78	9110	9032
Well	SDH-3	Trail Ridge Well	10/23/2008	1486.2	9110	7623.8
Well	SDH-3	Trail Ridge Well	9/19/2008	1553.68	9110	7556.32
Well	SDH-3	Trail Ridge Well	8/27/2008	1504.65	9110	7605.35
Well	SDH-3	Trail Ridge Well	7/8/2008	74	9110	9036
Well	SDH-3	Trail Ridge Well	6/30/2008	1504.68	9110	7605.32

**4. On what date does the MRP require a five-year resampling of baseline water data.**

Baseline parameters are to be taken in August of year 5 prior to each permit renewal (Table 7.14). The next permit renewal date is November 02, 2010, so the baseline analyses should be done on samples collected in August 2010.

**5. Based on your review, what further actions, if any, do you recommend?**

- Sample BC-3 at the Lower Right Fork of Bear Creek has shown a recent increase in the levels of Total Dissolved Solids (TDS) since Fall 2008. This indicates that excess sediment may be discharging into the creek. The operator should evaluate sediment controls in this area and determine if there is any mitigation needed to control the level of sediment entering the water body.
- UPDES Sample 004 exceeded the 30-day average discharge limitation of 500 mg/L for TDS during May/June 2009. More data points are recommended to be collected within the 30-day period to determine if UPDES compliance point 004 is meeting effluent standards.
- Depth to water levels (75-78 feet) reported in wells SDH-2 and SDH-3 is questionable when previous data have shown that the groundwater surface averages approximately 1,500 feet below well casing. These measurements should be reevaluated to determine an

accurate potentiometric surface for groundwater based on historical data. Please follow up with the Division to explain this discrepancy in groundwater levels from these wells.

6. **Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements?** YES ☐ NO ☒

7. **Follow-up from last quarter, if necessary.**

None

8. **Did the Mine Operator submit all the missing and/or irregular data?** YES ☒ NO ☐

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CC: K. Houskeeper